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| <b>TRANSMITTAL LETTER TO THE UNITED STATES<br/>DESIGNATED/ELECTED OFFICE (DO/EO/US)<br/>CONCERNING A SUBMISSION UNDER 35 U.S.C. 371</b>  |   | ATTORNEY'S DOCKET NUMBER<br><b>W062.PAT-29</b>                      |
| INTERNATIONAL APPLICATION NO.<br><b>PCT/US2004/015904</b>  |   | U.S. APPLICATION NO. (If known, see 37 CFR 1.5)<br><b>80/557999</b> |
| INTERNATIONAL FILING DATE<br><b>20 May 2004</b>  | PRIORITY DATE CLAIMED<br><b>21 May 2003</b> |   |
| TITLE OF INVENTION<br><b>Oscillatory Motion Based Measurement Method and Sensor for Measuring...</b>   |   |   |
| APPLICANT(S) FOR DO/EO/US<br><b>William D. Armstrong et al</b>   |   |   |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:  |   |   |
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a submission under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a submission under 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</li> <li>4. <input checked="" type="checkbox"/> The US has been elected (Article 31).</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))               <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).               <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ol> </li> <li>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))               <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input checked="" type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li> <li>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol> |   |   |
| Items 11 to 20 below concern document(s) or information included:  |   |   |
| <ol style="list-style-type: none"> <li>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>13. <input checked="" type="checkbox"/> A preliminary amendment.</li> <li>14. <input checked="" type="checkbox"/> An Application Data Sheet under 37 CFR 1.76.</li> <li>15. <input checked="" type="checkbox"/> A substitute specification.</li> <li>16. <input checked="" type="checkbox"/> A power of attorney and/or change of address letter.</li> <li>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821- 1.825.</li> <li>18. <input type="checkbox"/> A second copy of the published International Application under 35 U.S.C. 154(d)(4).</li> <li>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</li> </ol>  |   |   |

|   |                  |   |         |  |                     |
|---|------------------|---|---------|--|---------------------|
| U.S. APPLICATION NO. (if known, see 37 CFR 1.5)<br><b>200507999</b>   |                  | INTERNATIONAL APPLICATION NO.<br><b>PCT/US2004/015904</b>                     |         | ATTORNEY'S DOCKET NUMBER<br><b>W402 PAT-29</b> |                     |
| 20. Other items or information:<br><b>Express Mail Certificate<br/>Postcard<br/>Credit Card Authorization form</b>  |                  |   |         |  |                     |
| The following fees have been submitted  |                  |   |         | <b>CALCULATIONS</b>                            | <b>PTO USE ONLY</b> |
| 21. <input checked="" type="checkbox"/> Basic national fee (37 CFR 1.492(a))..... \$300   |                  |   |         | \$ <b>300</b>                                  |                     |
| 22. <input checked="" type="checkbox"/> Examination fee (37 CFR 1.492(c))   |                  |   |         |  |                     |
| If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... \$0   |                  |   |         | \$ <b>200</b>                                  |                     |
| All other situations..... \$200   |                  |   |         |  |                     |
| 23. <input checked="" type="checkbox"/> Search fee (37 CFR 1.492(b))  |                  |   |         |  |                     |
| If the written opinion of the ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... \$0  |                  |   |         |  |                     |
| Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority..... \$100  |                  |   |         | \$ <b>100</b>                                  |                     |
| International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB..... \$400   |                  |   |         |  |                     |
| All other situations..... \$500   |                  |   |         |  |                     |
| <b>TOTAL OF 21, 22 and 23 =</b>   |                  |   |         | <b>\$ 600</b>                                  |                     |
| <input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) or computer program listing in an electronic medium) (37 CFR 1.492(j)).<br>The fee is \$250 for each additional 50 sheets of paper or fraction thereof. |                  |   |         |  |                     |
| Total Sheets  | Extra Sheets     | Number of each additional 50 or fraction thereof (round up to a whole number) | RATE    |  |                     |
| - 100 =   | <b>0</b> / 50 =  |   | x \$250 | \$ <b>0</b>                                    |                     |
| Surcharge of \$130.00 for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).   |                  |   |         | \$   |                     |
| CLAIMS  | NUMBER FILED     | NUMBER EXTRA  | RATE    | \$   |                     |
| Total claims  | <b>65</b> - 20 = | <b>35</b>   | x \$ 50 | \$ <b>1750</b>                                 |                     |
| Independent claims  | <b>7</b> - 3 =   | <b>4</b>  | x \$200 | \$ <b>600</b>                                  |                     |
| MULTIPLE DEPENDENT CLAIM(S) (if applicable)   |                  |   | + \$360 | \$ <b>0</b>                                    |                     |
| <b>TOTAL OF ABOVE CALCULATIONS =</b>  |                  |   |         | <b>\$ 2950</b>                                 |                     |
| <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by 1/2.   |                  |   |         |  |                     |
| <b>SUBTOTAL =</b>   |                  |   |         | <b>\$ 1475</b>                                 |                     |
| Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)).   |                  |   |         | \$   |                     |
| <b>TOTAL NATIONAL FEE =</b>   |                  |   |         | <b>\$ 1475</b>                                 |                     |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property  |                  |   |         | \$ <b>0</b>                                    |                     |
| <b>TOTAL FEES ENCLOSED =</b>  |                  |   |         | <b>\$ 1475</b>                                 |                     |
|   |                  |   |         | Amount to be refunded:                         | \$                  |
|   |                  |   |         | Amount to be charged                           | <b>\$ 1475</b>      |

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

- a. ☐ A check in the amount of \$ \_\_\_\_\_ to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees.  
A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-2089. A duplicate copy of this sheet is enclosed.
- d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

**NOTE:** Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

SEND ALL CORRESPONDENCE TO:

Emery L. Tracy  
PO Box 1518  
Boulder, CO 80396

Emery L. Tracy  
SIGNATURE  
Emery L. Tracy  
NAME  
34,081  
REGISTRATION NUMBER

**EMERY L. TRACY**

ATTORNEY AT LAW

*Patents, Trademarks, Copyrights, and  
Related Intellectual Property Matters*

10/397999

18 NOV 2005

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November 18, 2005

COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VIRGINIA 22313-1450

**Docket: W002.PAT-29**

Sir:

Transmitted herewith for submission to enter the national stage under 35 U.S.C. § 371 is:  
**PATENT APPLICATION** of:

**William D. Armstrong et al**

**For: OSCILLATORY MOTION BASED MEASUREMENT METHOD AND SENSOR  
FOR MEASURING WALL SHEAR STRESS DUE TO FLUID FLOW**

Enclosed are:

- 1 Transmittal Letter to the United States Designated/Elected Office Concerning a Submission under 35 U.S.C. § 371;
- 1 Copy of International Application;
- 1 Preliminary Amendment;
- 1 Substitute Specification, Five (5) Sheets of Drawings; Abstract;
- 1 Cover sheet;
- 1 Express Mail Certificate;
- 1 Declaration and Power of Attorney;
- 1 Postcard; and
- 1 Credit Card Payment Form in the amount of \$ 1,475.00 for the basic national fee under 37 C.F.R. § 1.492(a).

Respectfully submitted,

WILLIAM D. ARMSTRONG et al

By: 

Emery L. Tracy, Reg. No. 34,081

P.O. Box 1518

Boulder, Colorado 80306

Phone: (303) 443-1143 Fax: (303) 443-1415

Enc.

10/557999

IAP20 Rec'd PCT/PTO 18 NOV 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|             |   |   |
|-------------|---|---|
| Applicant   | : | William D. Armstrong et al  |
| Filing Date | : | Herewith  |
| For         | : | OSCILLATORY MOTION BASED<br>MEASUREMENT METHOD AND SENSOR<br>FOR MEASURING WALL SHEAR STRESS<br>DUE TO FLUID FLOW |
| Docket No.  | : | W002.PAT-29   |

**CERTIFICATE OF EXPRESS MAILING**

"Express Mail" mailing label number: EV605978775US  
Date of Deposit: November 18, 2005

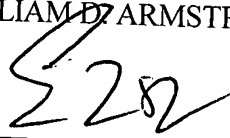
I certify that the following paper(s) and/or fee(s) are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR § 1.10 on November 18, 2005, addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, for submission to enter the national stage under 35 U.S.C. § 371:

1. Copy of International Application
2. Substitute Specification; Abstract; Five (5) sheets of drawings
3. Cover sheet
4. Transmittal Letter
5. Express Mail Certificate
6. Declaration and Power of Attorney
7. Postcard
8. Credit Card Payment Form in the amount of \$ 1,475.00 for basic national fee under 37 C.F.R. § 1.492(a).

Respectfully submitted,

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